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ABSTRACT

Research has shown that medical self-care holds promise in not only improving health, but also in potentially reducing the cost of medical care. A study was conducted to evaluate the perceived impact of the distribution of a self-care book on members of a Health Maintenance Organization (HMO) in the Dallas-Fort Worth, Texas, area. Data were obtained from 15 physicians, 16 nurses, and 118 members of the HMO. Physicians and nurses received copies of the self-care book and were interviewed. HMO members received copies of the book and, 3 months later, completed survey questionnaires. The results revealed that most of the HMO members, physicians, and nurses in the study perceived the book as a useful adjunct to medical services. Data concerning its usefulness in decreasing rates of utilization of medical services, however, were inconclusive. There appeared to be some data supporting the contention that health promotion, in the form of the distribution and utilization of the self-care book, can perhaps reduce the use of services and increase the use of less costly preventive care as opposed to inpatient and outpatient services. More research is needed to precisely determine the economic benefits of using the self-care book. (Author/NB)

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Perceived Impact of 1

PERCEIVED IMPACT OF DISTRIBUTION OF A SELF-CARE

BOOK ON MEMBERS OF AN HMO IN TEXAS

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ABSTRACT

This study evaluated the perceived impact of the distribution of a self-care book on members of a Health Maintenance Organization (HMO) in the Dallas-Fort Worth, Texas area. Forty-two percent of the subjects in the sample (118 members of the HMO) provided data for this study. In addition, usable data were received from 32 percent of the physicians, and 61 percent of the nurses of the HMO. The study was premised on the assumption that consumers with knowledge of self-care (as evidenced by their reading of the self-care book provided) would make fewer demands on their group health plan, thus, reducing their rate of utilization. Most of the HMO members, physicians, and nurses in the study perceived the book as a useful adjunct to medical services. Its usefulness in decreasing rates of utilization of medical services, however, is inconclusive.

Key words: Self Care, HMO, cost containment

Introduction

The practice of self-care is ancient. Well before the advent of modern science and a developed health delivery system, health care was the responsibility of the individual. Today, there is a growing trend towards self-care. Health education as a health care benefit is increasingly being accepted among health providers and consumers. It has been used by providers to help consumers to take responsibility for their health, understand risk, assess personal and social priorities, and use professional resources in a self-protecting and economical manner. 1

Medical self-care is the dominant form of medical care by far; it accounts for 85 percent to 95 percent of all medical care. 2 It has been estimated that a marginal drop in medical self-care for minor ailments would result in a significant increase in the number of visits to the physician. If only two percent of individuals who use over-the-counter drugs for minor illnesses were to visit the physician instead, the annual increase in office visits would be \$292 million, a sizeable growth of 62 percent. 3

Conversely, a marginal increase in the amount of medical self-care would result in a substantial decrease in professional visits for minor ailments. Vickery and associates 1 conducted the Cooperative Health Education Project to study the effects of a self-care educational intervention program on medical visits. Their findings were promising: 17 percent reduction in medical

visits; 35 percent reduction in visits for minor illnesses; a savings of \$2.50 to \$3.50 for every dollar spent on the program.

Other studies confirm these findings. Lorig and associates 4 reported significant reductions in medical visits using similar educational interventions in a study involving a large number of employees of California corporations. Kemper 5 reported significant reductions in per-visit costs and consultant referrals in a controlled trial of a self-care program using seminars. The difference in total medical care costs between experimental and control groups, however, was not statistically significant. It is clear that medical self-care holds promise in not only improving health, but also in potentially reducing the cost of medical care

Against this backdrop, our study evaluated the perceived impact of the distribution of a self-care book, Take Care of Yourself-A Consumer's Guide to Medical Care, 6 on members of a Health Maintenance Organization (HMO) in the Dallas-Fort Worth, Texas area. Hereafter, this work will be referred in this paper as the "book". (For a more detailed account of the contents of the book, please refer to the appendix). The study was premised on the assumption that individuals with knowledge about self-care [as evidenced by their reading of the book] would make fewer demands on their group health plan, thus reducing their rate of utilization of services.

Purpose of Study

The two-fold purposes of the study were to: (a) provide data on the effect of the distribution of the book on reducing the utilization rate of the healthplan services by HMO members; and (b) evaluate the impact of this book as a health education tool as perceived by the members and medical staff of the HMO.

More specifically, in regard to HMO members, the objectives of this study were to obtain data concerning:

- 1 Whether they received a copy of the book.
- 2 To what extent did they read the book.
- 3 How useful did they find the book.
- 4 To what extent have they used the following types of healthplan services since receiving the book: out-patient services; in-patient services; pharmacy services; health education services; mental health services; optometry services.

In regard to HMO physicians, the objectives of this study were to obtain data concerning:

- 1 Whether or not they examined the book.
- 2 Their perceptions about the usefulness of the book as a tool in patient education.
- 3 Their perceptions of the impact of the book in reducing patient over-utilization or improper utilization of medical services.
- 4 Their perceptions of whether or not their patients found reading the book useful in regard to health

planning.

- 5 Their perceptions of whether or not the information in the book would result in their patients utilizing more medical self-care.
- 6 Their recommendations and reasons for continued or non-continued use of the book by the HMO.

In relation to the nursing staff, the objectives of the study were to obtain information in terms of:

- 1 Whether or not they had examined the book.
- 2 Their perceptions of the usefulness of the book as a tool in patient education.
- 3 Their perceptions of the impact of the book in reducing patient over-utilization or improper utilization of medical services.
- 4 Their perceptions of whether or not the patients found the book useful in terms of health care planning.
- 5 Their perceptions of whether or not the information in the book would result in their patients utilizing more medical self-care.
- 6 Their recommendations and reasons for continued or non-continued use of the book by the HMO.

Method

Setting of Study

The setting for the study was a major HMO healthplan of Texas, located in various offices in Dallas-Fort Worth, Texas area. The subjects of the three populations studied, i.e., members, physicians, and nursing staff are located in the Dallas-Fort Worth Standard Metropolitan Statistical Area. 7 The corporation made available to the researchers the data base relevant to the three populations studied, and authorized the use of its name in conjunction with the study. This procedure provided legitimization for the study, and facilitated access to the study populations.

Limitations

- 1 The study is evaluative in nature, and was designed to generate data with the pragmatic purpose of serving the "felt needs" of the corporation.
- 2 The study is attitudinal in nature since its purpose is to identify the attitudes, feelings and perceptions of various groups that are involved with the Healthplan.
- 3 The study is limited by the bias inherent with self-reports of subjects.
- 4 Measurements errors of survey research limit this study, although special efforts were made to control for such errors.

Research plan

A survey questionnaire and an interview schedule were used to collect research data for this study. The survey questionnaire was used exclusively with HMO members and it consisted of two parts: a series of 15 fixed and open-ended attitudinal questions about the book and the healthplan, and a series of fixed questions designed to elicit demographic data on the subjects. The questionnaire had been pilot-tested with a comparable group. A telephone interview schedule was constructed to obtain data from physicians and nurses. The schedule comprised six fixed and open-ended attitudinal questions. (Copies of the questionnaire and the interview schedule may be obtained from the corresponding author by request).

Three populations were surveyed in this study: members of the healthplan, physicians, and nurses employed by the HMO.

A sample of 300 healthplan members was randomly drawn from a computerized list of 20,348 members distributed across 265 healthplan subscription groups of varying sizes.

Special care was taken to ensure some degree of proportional representation: one subject was randomly selected from each of the 265 groups, and an over-sample of 35 was randomly selected from those groups with more than 50 members. Each subject received a copy of the book. Three months later, a survey questionnaire was sent to each subject. Follow-up letters and telephone calls were used to encourage participation. The study was completed in 1986.

Forty-seven physician and 23 nurses distributed across all six healthcare centers in the Dallas-Fort Worth area were surveyed. Each received a copy of the book. The data were obtained from these two groups through a telephone interview using a structured schedule.

Results

The quantitative data from the questionnaire were computer analyzed using the SAS [Statistical Analysis System] software package. 8 The Reg (simple regression) procedure was used to test the association between the related variables [questions] contained in the questionnaire and interview schedule (pp. 655-709). The inferences were made at no less than a 95% confidence level ($\alpha = 0.05$). In addition, descriptive statistical data were prepared. These data present a summary of the demographic parameters of the HMO members in the sample, and their usage rates of the services.

All fixed-response questions were presented through descriptive statistics, while open-ended responses were first clustered by categories of responses before being depicted through descriptive statistics. All numbers were rounded off to the next highest number. In addition, there can be more than one response per respondent in regard to all items in the questionnaire or interview schedule.

HMO Members: Descriptive and Attitudinal Data

Of the sample of 300, 42 percent or 118 members of the HMO responded to the questionnaire. (Seventeen questionnaires were returned or undeliverable). Of that number, more than 70 percent indicated that they had read all or part of the book, while 16 percent stated that they did not read the book. Approximately 12 percent claimed that they had not received the book, while 2 percent had received the book but had since left the healthplan.

Approximately 77 percent of the respondents were White, 19 percent were Black, and 4 percent were Hispanic. No Asians, American Indians, or Foreign Nationals were in the group. Females out-numbered males approximately 3 to 1. Ninety-four percent were married. The average age of the respondents was 39. The range of ages was 22 to 68. The majority (58 percent) were in professional, managerial or technical occupations. The next largest group cluster at clerical/secretarial occupations (24 percent), while the remainder are somewhat evenly distributed across a number of other occupations. The average income of the respondents (\$30,421) exceeds by \$7,134 the average annual total compensation in 1983 per full-time equivalent employees for all domestic industries (U.S. Department of Commerce, 1985, p.416).

In terms of the respondents usage of the HMO's health services, the highest average usage per respondent per year was in relation to pharmacy services (3.93 uses per respondent), and out-patient medical services (3.77 uses per respondent). These

two services accounted for 87 percent of the HMO services used. The average use per respondent of the other services offered by the HMO included: eye care (.90), in-patient care (.14), health education (.07), and mental health care (.04).

Finally, with regard to the book as a health education tool, most of the respondents found the book to be useful. Usefulness of the book was measured on a 0-1 scale, where 1 was a yes response and 0 was a no response. Five categories of usefulness of the book were ascertained: improved health habits, ability to answer health questions, ability to identify health problems, learned minor medical care, and improved understanding of health care. In four categories of usefulness, the average response per person exceeded .5 (the mean point on a 0-1 scale). The exception was improved health habits (.41). The mean of the means across all five categories of usefulness was .70.

HMO Members: Analytical Data

Regarding the effect of reading the book on the extent of services used, overall the data were inconclusive. However, there appears to be an association between reading the book and in-patient service usage; that is, persons who read all or most of the book had a tendency to make more usage of in-patient services. In this case, the null hypothesis, at $\alpha = 0.05$, was rejected (See Table I,1). However, no significant statistical relationships were found between reading the book and making use of the other service areas: out-patient services.

health education, drugs and pharmacy, mental health services, and optometry services.

The relationship among certain demographic characteristics of the respondents and their having read all or most of the book was explored. As can be noted in Table I, 2, there is some association between being female and reading most or all of the book. This association is supported at the 0.05 level of probability.

The relationship of demographic characteristics of the respondents and the five areas of usefulness of the book was also examined. These variables were statistically related at the 0.05 level only in regard to: 1) age, and helping to learn how to give minor medical care (Table I, 3), and 2) marital status, and giving answers to questions about certain medical problems (Table I, 4). In terms of age variable, the younger the respondents, the more likely they were to learn something from the book. In terms of marital status, the unmarried respondents were likely to have had fewer questions answered by the book than those who were married. Those persons who were divorced or separated, are likely to have just as many questions answered for them, as those who were married.

Physicians: Attitudinal Data

Data were obtained from 15 of the 47 physicians in the population of healthplan medical providers (32 percent). Data derived from fixed response questions in the schedule indicated

that the physicians felt that the book was: useful in patient education (93 percent), would result in patients utilizing more medical self-care as a substitute for care provided by the medical staff (80 percent), and would be useful to them in terms of their health care planning (56 percent). Moreover, all of those responding recommended continued utilization of the book. What stands out in contradiction to these positive responses, howzzzever, is the issue of the usefulness of the book in decreasing patient over-utilization or improper utilization of the services. In this instance, a majority (64 percent) felt that the book was not useful. Overall, 76 percent of the physicians had favorable opinions about the usefulness of the book.

Clusters of opinions or attitudes about the usefulness of the book were also compiled from the verbal responses of physicians. The majority of favorable responses concerning usefulness centered on the notions that: it provides basic information (38 percent), helps with self-diagnosis or self-help (19 percent), cuts down on the use of the services (19 percent), helps patients to gauge the urgency of their illnesses (19 percent), and helps provide nurses with information to give to patients (5 percent). Overall, most of the favorable responses (38 percent) were based on the idea that the book provided basic health information for the patients.

By contrast, a number of responses focused on ways in which the book was not useful. Of these responses, 82 percent centered

on three items: that the book was not technical enough (44 percent), that it causes the patient alarm (19 percent), and that it puts the doctors at odds with what the patient reads in the book (19 percent). The remainder of the responses indicated that the patients do not utilize the book or that the book is too complex (31 percent). It should be noted, however, that a larger number of favorable responses (21) were recorded concerning the usefulness of the book, compared to unfavorable responses about the responses of the book (16).

The physicians were also asked to express their opinions, through the use of open-ended questions, concerning ways in which the book could have been more effectively utilized. Fifty-five percent of the responses resided in two items: if the patients had read the book (27.5 percent), and if the HMO had pushed its use among its membership (27.5 percent). The rest of the responses trail off into single items of explanation without any clear patterns.

In terms of the impact of the book upon service utilization, of those physicians who responded to their item, 67 percent felt that the book was not useful in affecting rates of service. According to them, patients are not using the book for the reasons previously noted: they had not read it, and the HMO had not pushed its use among its membership.

No clear pattern of responses was established in regard to their perceptions about whether or not their patients saw the book as being useful in health care planning. This was the most

hypothetical of the questions and generated the fewest number of responses from the physicians.

By contrast, the second largest number of responses were generated in regard to the issue of whether or not the information in the book would result in the patients utilizing more medical self-care, instead of office-based care. Sixty-five percent of the responses clustered in the yes area, while 35 percent were in the no area. These results seem to suggest that most of the physicians felt that information in the book would make a difference.

Lastly, the physicians were asked for their recommendations concerning the continued utilization of the book. This item was included for the purpose of being a litmus test of their opinions about the book. Forty-seven percent responded unequivocally in favor of its continued utilization. Forty percent were more guarded in their opinions, but generally seemed to favor its continued use. Thirteen percent recommended discontinuing the use of the book.

In the main, the responses of the physicians seem to indicate that they perceived the book as useful, and that the HMO ought to utilize it.

Nurses: Attitudinal Data

Data were obtained from 16 of the 23 nurses in the population. Fourteen nurses, or 61 percent, were able to provide usable data. With regard to the nurses, data obtained from

fixed-response questions in the schedule indicated that a clear majority of them held a positive opinion about the usefulness of the book. A greater number of positive responses were noted specifically in terms of the book's usefulness in patient education (86 percent), in resulting in the patients utilizing more medical self-care (79 percent), and in terms of their practicing more health care planning (67 percent).

Interestingly, both the physicians and the nurses responded positively to these three areas. In addition, the majority of unfavorable responses from both groups were also in regard to the usefulness of the book in terms of decreasing patients over-utilization or improper utilization of services. Similarly, the nurses held, as did the physicians, that the HMO ought to continue to use the book. Overall, 75 percent of the nurses had positive opinions about the usefulness of the book.

When asked open-ended questions about the usefulness of the book, the majority of nurses indicated that the book helped with self-diagnosis (44 percent), and provided basic information (31 percent). These two areas contained three-fourths of the positive responses. Nineteen percent of respondents indicated that the book helped patients to understand the urgency of their illnesses. By contrast, only six percent of them felt that use of the book helped to cut down on the use of health services.

A large number of ideas were advanced concerning ways in which the book was not useful. Half of the responses from this group noted that either patients did not utilize it (30 percent),

or the book was not technical enough (20 percent). A large number of responses (20 percent) were in the opposite direction, namely, that the book was too complex and time consuming to read. Thirty percent of the responses were equally distributed across these remaining items: the book causes patients alarm, not all patients had the book; too much in the book is open to interpretation.

The results concerning ways the book could have been more effectively utilized are somewhat inconclusive. Seven areas were noted, but the responses are, in the main, nearly equally arrayed across all seven. If any pattern was established, it relates to the fact that most of the responses (45 percent) centered on two issues concerning more effective utilization of the book: 1) if it had been given to every member; 2) if patients had read the book.

A number of responses were proffered concerning ways in which the book was or was not useful in decreasing patient over-utilization or improper utilization of medical services. A clear pattern emerges here since 60 percent of the responses indicated that the book was not useful in this regard because the patients are not using the book (40 percent), or because the book was too general (20 percent). Those who expressed positive attitudes did so because their responses indicated that the patients were using the book (20 percent), or that they can refer patients to sections of the book to read (10 percent). The

remaining 20 percent of the responses were scattered over other areas of concern.

The nurses also stated that the book was useful to their patients in terms of health care planning. Of this group, 58 percent felt this way because their patients had stated that the book was useful, or because they noted that their patients had bothered to check out their problems against the book before telephoning the clinic. However, some respondents (41 percent) held that the book was either not useful to patients, or that the patients perceived the book being used as a substitute for medical care that they were paying for.

A majority of responses from the nurses (67 percent) indicated that they believed that the book did result in patients utilizing more medical self-care. Thirty-three percent stated that while the book would help in terms of self-care, it would not cut down service utilization.

Finally, a majority (58 percent) recommended continued utilization of the book. This recommendation is premised on the following beliefs: the book cuts down on misuse of services, provides information on self-care; shows that the HMO cares about them. Twenty-five percent were somewhat equivocal with their support, noting that they would recommend continued utilization if the book were changed or shortened. However, 17 percent thought that the book was a waste of money, not effective, and not of benefit.

Overall, the nurses who responded, like the physicians, generally perceived the book to be useful, and felt that the HMO ought to continue its use.

Conclusions .

Most of the HMO members found the book to be useful. To them, distribution of the book may have demonstrated a sense of corporate social responsibility as well as an economic interest in their health. Similarly, the majority of physicians and nurses perceived the book as a useful adjunct to medical services. Its usefulness in decreasing rates of utilization of services, however, is more problematic, as far as these two groups are concerned.

It seems reasonable to conclude that health promotion, in the form of the distribution and utilization of this self-care book, can perhaps reduce the usage of services, and, at least increase the use of less costly preventive care, as opposed to in-patient and out-patient services. Overall, there seems to be some data to support this contention. If this is true, then satisfaction does improve the "bottom line," and the benefits of in-house health education approaches, including continued distribution and utilization of this book, or of other books or materials of a health promotion nature, ought to outweigh the cost of these kinds of materials.

However, to more precisely determine the economic benefits of using this book, or of using other such materials, more research

needs to be done. This new research should use comprehensive cost data for the periods immediately before the distribution of this book or these kinds of materials, and now, as well as sales figures and retention rates of members for the two periods in question.

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Table I, 1-4

Summary Table for One-Way Analysis of Variance: Associations between Certain Variables among Subjects in the Sample						
Dependent/ Indep Variable	Source	DF	SS	Mean . Square	F Value	Prob > F*
1 Read all/ Inpatient	Model Error	1 81	1.127 19.594	1.127 0.241	4.663	0.0338
Read all = 0.455 + 0.181 (Inpatient) (0.055) (0.084)						
2 Read all/ Female	Model Error	1 81	1.256 19.466	1.256 0.240	5.228	0.0248
Read all = 0.576 + - 0.254 (Female) (0.067) (0.111)						
3 Learning/ Age	Model Error	1 81	0.557 11.080	0.557 0.136	4.076	0.0468
Learning = 1.089 + - 0.006 (Age) (0.132) (0.003)						
4 Answers/ Unmarried	Model Error	2 80	0.719 7.300	0.359 0.091	3.940	0.0233
Answers = 0.949 + - 0.234 (Unmarried) (0.039) (0.089)						

* P < 0.05

Standard errors are in parentheses below estimates

Appendix A

The contents of the book, Take Care of Yourself - A Consumer's Guide to Medical Self-Care, by Vickery and Fries address such topics as :

SECTION ONE: SKILLS FOR THE MEDICAL CONSUMER

- Your habits and your health
- An ounce of prevention
- Finding the right physician
- Aging and vitality
- Special problems of the senior citizen
- The office visit
- Choosing the right medical facility
- Reducing your medical costs
- The home pharmacy
- Avoiding the medical fraud

SECTION TWO: THE PATIENT AND THE COMMON COMPLAINT

- Common injuries
- The ear, nose and throat
- Allergies
- Common skin problems
- Childhood diseases
- Bones, muscles and joints
- Problems of stress and strain
- Chest pain, shortness of breath, and palpitations
- Eye problems
- The Digestive tract
- The urinary tract
- For women only
- Herpes infections of the genitalia
- Contraception
- Sexual problems
- High blood pressure

SECTION THREE: FAMILY RECORDS